

SDY
a language identifier to receive speech input data from a user and to identify the language spoken by the user;

at least one speech recognizer to receive the speech input data and the language identifier and to convert the speech input data into a first text based at least in part on the language identifier;

at least one natural language processing module to parse the first text to extract keywords;

AB
at least one search engine to use the keywords as a search term and to return search results;

at least one language translator to automatically translate the keyword into a plurality of automatically selected languages prior to input to the search engine, to receive results from the search engine, and to automatically translate the search results in languages other than the language spoken by the user into the language spoken by the user;

at least one automatic summarization module to automatically summarize the translated search results;

at least one natural language generator to convert the summarized results into a second text in a natural language format according to the language spoken by the user.

35. The system of claim 33, further comprising at least one text to speech module to render the second text audibly to the user.

REMARKS

Reconsideration of the above referenced application in view of the following amendment and remarks is requested. Claims 1, 4-5, 7-8, 10, 13, 16-17, 19-20,

22, 25, 27, 30, and 32-33 have been amended. Claims 6, 18, 28, 31, and 34 have been cancelled. Existing claims 1, 3-5, 7-13, 15-17, 19-27, 29-30, 32-33, and 35 remain in the application.

ARGUMENT

Claims 1, 3, 5, 6, 9, 10, 12, 13, 15, 17-18, 21-22, 25-26 and 28-30 are rejected under 35 USC 103(a) as being unpatentable over Junqua et al. (US 6,324,512)(hereinafter Junqua) in view of Cohen et al (EP 1 014 277)(hereinafter Cohen).

In order to more particularly recite the present invention, the limitations of claim 6 have been incorporated into claim 1. Claim 6 has been cancelled. Junqua is the primary reference relied on by the Examiner in rejecting the original claim 6. A thorough review of Junqua reveals that the cited reference teaches or suggests almost nothing about the invention as currently claimed.

Junqua describes an interactive electronic program guide system using spoken language. Users can speak their commands to the audio/video system directly or through the telephone or the Internet. If the system finds the requested program in a specific database, the system formulates a response, informing the user that the program is, or is not, available. The formulation of the response in Junqua is simply a process of filling slots. For example, the system only needs to fill the slots in a template response such as, (Slot 1: requested_program) is (Slot 2: yes_no) available on (Slot 3: requested_day).

However, the limitations in claim 6 describe an automatic summarization module, which generates a short summary (gist) for the search results, if necessary. The search in the present invention is performed through multiple search engines over multiple databases. The user desired information may be

scattered in many search results and some results may be very long. The automatic summarization module (36 in Fig. 1) may produce a shorter summary text from these search results. Also there are some other situations where automatic summarization proves very useful. For example, if the user prefers to listen to the search results when the results include tables, graphs, or other unspeakable objects, the automatic summarization module may produce a summary text for the contents of these unspeakable objects. The natural language generation module converts the summary text into the natural language format. The text to speech module subsequently presents the converted summary text to the user in the synthesized speech format.

The summary text provided by the automatic summarization module in the present invention is not the same as the response formulated by the dialog manager in Junqua, which simply advises the user "that the program is, or is not, available for viewing on the requested day." These two different concepts are not even related. Throughout the entire patent, Junqua teaches or suggests nothing about automatic summarization. Limitations in original claim 6 are allowable, and amended claim 1 with these limitations is thus allowable.

Accordingly, independent claim 13 is amended to incorporate the limitations in claim 18, and independent claim 25 is amended to incorporate the limitations in claim 28. Claims 18 and 28 have been cancelled. A similar amendment argument can be made for amended claims 13 and 25 as the argument made above for amended claim 1 since these claims now include similar limitations. Therefore, claims 13 and 25 are also allowable.

Because independent claims 1, 13, and 25 are allowable, all claims dependent therefrom are also allowable (e.g., existing claims 4-5, 7-12, 16-17, 19-24, 26-27, 29-30, and 32).

Additionally, the Applicant desires to respond in detail to various dependent claims.

Claims 4, 7, 8, 16, 19, 20, 27, 31, and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Junqua in view of Cohen, and further in view of Nosohara (EP 0 838 765) (hereinafter Nosohara).

The Examiner in the Office Action points out that "the features upon which applicant relies (i.e., automatic destination language selection) are not recited in rejected claim(s) [(claims 4, 7, 16, 19, and 27)]." Claims 4, 7, 16, 19, and 27 are amended to recite the automatic destination language selection feature. Therefore, these claims are now allowable. Because claim 8 depends from claim 7 and claim 20 depends from claim 19, Claim 8 and 20 are also allowable. The limitations in claim 31 have been incorporated into claim 27, and claim 31 has been cancelled.

Additionally, amended claims 7, 19, and 27 now also recite the feature of automatic search across multiple languages, which is described in the specification. This feature is not taught or suggested by Junqua, Cohen, or Nosohara, alone or in combination.

As for claim 33, it is rejected based on the same reasons used in the rejection of claims 4, 7, and 8. Claim 33 has been amended to incorporate automatic summarization module which was originally recited in claim 34. Claim 34 has been cancelled. Additionally, claim 33 has been amended to recite features of automatic destination language selection and automatic search across multiple languages. All of these additional limitations are not taught or suggested by Junqua, Cohen, or Nosohara, alone or in combination. Claim 33 is, therefore, allowable. Because claim 35 depends from claim 33, claim 35 is also allowable.

CONCLUSION

In view of the foregoing, claims 1, 3-5, 7-13, and 15-17, 19-27, 29-30, 32-33, and 35 are all in condition for allowance. If the Examiner has any questions, the Examiner is invited to contact the undersigned at (503) 264-8074. Early issuance of Notice of Allowance is respectfully requested.

Respectfully submitted,

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1. (twice amended) A method of interfacing to a system comprising:
receiving [voice] speech input data from a user;
identifying a language spoken by the user from the [voice] speech input data;
converting the [voice] speech input data into a first text in the identified language by recognizing the user's speech in the [voice] speech input data based at least in part on the language identifier;
parsing the first text to extract [a keyword] keywords;
using the [keyword] keywords as a command to an application;
receiving results to the command;
automatically summarizing the results;
converting the summarized results into a second text in a natural language format according to the [identified] language spoken by the user; and
rendering the second text for perception by the user.

3. The method of claim 1, wherein rendering comprises converting the second text into speech and rendering the speech to the user.

4. (twice amended) The method of claim 1, further comprising automatically translating the [keyword] keywords into a plurality of automatically selected languages other than the identified language and using the translated keywords as the command.

5. (twice amended) The method of claim 1, further comprising using the [keyword] keywords as a search query to [a] at least one search engine, wherein

the results comprise search results from the at least one search engine operating on the search query.

6. Cancelled.

7. (twice amended) The method of claim 1, further comprising automatically translating the [keyword] keywords into a plurality of automatically selected languages other than the identified language and using the translated keywords as a search query to [a] at least one search engine in multiple languages, wherein the results comprise search results in multiple languages from the at least one search engine operating on the search query.

8. (twice amended) The method of claim 7, further comprising automatically translating search results in languages other than the [identified] language spoken by the user into the [identified] language spoken by the user.

9. The method of claim 1, wherein the application comprises a web browser.

10. (once amended) The method of claim 9, wherein the web browser interfaces with [a] at least one search engine and the command comprises a search query.

11. The method of claim 9, wherein the web browser interfaces with a shopping web site and the command comprises at least one of a purchase order and a request for product information.

12. The method of claim 1, wherein the speech comprises conversational speech.

13. (twice amended) An article comprising: a storage medium having a plurality of machine readable instructions, wherein when the instructions are executed by a processor, the instructions provide for interfacing to a system by receiving [voice] speech input data from a user, identifying a language spoken by the user from the [voice] speech input data, converting the [voice] speech input data into a first text in the identified language by recognizing the user's speech in the [voice] speech input data based at least in part on the language identifier, parsing the first text to extract [a keyword] keywords, using the [keyword] keywords as a command to an application, receiving results to the command, automatically summarizing the results, converting the summarized results into a second text in a natural language format according to the [identified] language spoken by the user, and rendering the second text for perception by the user.

15. The article of claim 13, wherein instructions for rendering comprise instructions for converting the second text into speech and rendering the speech to the user.

16. (twice amended) The article of claim 13, further comprising instructions for automatically translating the keyword into a plurality of automatically selected languages other than the identified language and using the translated keywords as the command.

17. (twice amended) The article of claim 13, further comprising instructions for using the [keyword] keywords as a search query to [a] at least

one search engine, wherein the results comprise search results from the at least one search engine operating on the search query.

18. Cancelled.

19. (twice amended) The article of claim 13, further comprising instructions for automatically translating the [keyword] keywords into a plurality of automatically selected languages other than the identified language and using the translated keywords as a search query to [a] at least one search engine in multiple languages, wherein the results comprise search results in multiple languages from the at least one search engine operating on the search query.

20. (twice amended) The article of claim 19, further comprising instructions for automatically translating search results in languages other than the [identified] language spoken by the user into the [identified] language spoken by the user.

21. The article of claim 13, wherein the application comprises a web browser.

22. (once amended) The article of claim 21, wherein the web browser interfaces with [a] at least one search engine and the command comprises a search query.

23. The article of claim 21, wherein the web browser interfaces with a shopping web site and the command comprises at least one of a purchase order and a request for product information.

24. The article of claim 13, wherein the speech comprises conversational speech.

25. (twice amended) A language independent [voice] speech based user interface system comprising:

a language identifier to receive [voice] speech input data from a user and to identify the language spoken by the user;

at least one speech recognizer to receive the [voice] speech input data and the language identifier and to convert the [voice] speech input data into a first text based at least in part on the language identifier;

at least one natural language processing module to parse the first text to extract [a keyword] keywords; [and]

at least one summarization module to automatically summarize the search results from at least one search engine operating on the search query using the extracted keywords; and

at least one natural language generator to convert the summarized results into a second text in a natural language format according to the [identified] language spoken by the user.

26. The system of claim 25, further comprising at least one text to speech module to render the second text audibly to the user.

27. (twice amended) The system of claim 25, further comprising at least one language translator to automatically translate the [keyword] keywords into a plurality of automatically selected languages for use as the search query, and to receive results from the search engine and automatically translate the [second

text] search results in languages other than the language spoken by the user into the [identified] language spoken by the user prior to summarizing the translated results and converting the summarized results into the second text [into the] in a natural language format.

28. Cancelled.

29. The system of claim 25, wherein the system is coupled to a web browser.

30. (once amended) The system of claim 29, wherein the web browser interfaces with [a] at least one search engine, the keyword comprises a search query [for the search engine], and the second text comprises search results from the at least one search engine.

31. Cancelled.

32. (once amended) The system of claim 29, wherein the web browser interfaces with a shopping web site and the [keyword] command comprises at least one of a purchase order and a request for product information.

33. (twice amended) A language independent [voice] speech based search system comprising:

a language identifier to receive [voice] speech input data from a user and to identify the language spoken by the user;

at least one speech recognizer to receive the [voice] speech input data and the language identifier and to convert the [voice] speech input data into a first text based at least in part on the language identifier;

at least one natural language processing module to parse the first text to extract [a keyword] keywords;

[a] at least one search engine to use the [keyword] keywords as a search term and to return search results;

at least one language translator to automatically translate the keyword into a plurality of automatically selected languages prior to input to the search engine, to receive results from the search engine, and to automatically translate the search results in languages other than the language spoken by the user into [second text in] the [identified] language spoken by the user [when the search results are in a plurality of languages]; [and]

at least one automatic summarization module to automatically summarize the translated search results;

at least one natural language generator [to receive results to the command and] to convert the summarized results into a second text [into] in a natural language format according to the [identified] language spoken by the user.

34. Cancelled.

35. The system of claim 33, further comprising at least one text to speech module to render the second text audibly to the user.